OM-184 517H
August 2001

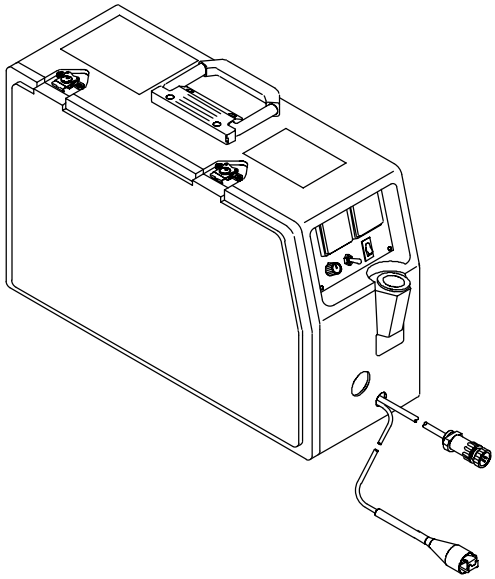
Processes

MIG (GMAW) Welding
Flux Cored (FCAW) Welding

Description

Wire Feeder

Super S-32P Ultra-Lite



OWNER'S MANUAL

Visit our website at
www.MillerWelds.com

From Miller to You

Thank you and *congratulations* on choosing Miller. Now you can get the job done and get it done right. We know you don't have time to do it any other way.

That's why when Niels Miller first started building arc welders in 1929, he made sure his products offered long-lasting value and superior quality. Like you, his customers couldn't afford anything less. Miller products had to be more than the best they could be. They had to be the best you could buy.

Today, the people that build and sell Miller products continue the tradition. They're just as committed to providing equipment and service that meets the high standards of quality and value established in 1929.

This Owner's Manual is designed to help you get the most out of your Miller products. Please take time to read the Safety precautions. They will help you protect yourself against potential hazards on the worksite. We've made installation and operation quick and easy. With Miller you can count on years of reliable service with proper maintenance. And if for some reason the unit needs repair, there's a Troubleshooting section that will help you figure out what the problem is. The parts list will then help you to decide which exact part you may need to fix the problem. Warranty and service information for your particular model are also provided.

ISO 9001 REGISTERED QUALITY SYSTEM

Miller is the first welding equipment manufacturer in the U.S.A. to be registered to the ISO 9001 Quality System Standard.

Miller Electric manufactures a full line of welders and welding related equipment. For information on other quality Miller products, contact your local Miller distributor to receive the latest full line catalog or individual catalog sheets. **To locate your nearest distributor or service agency call 1-800-4-A-Miller, or visit us at www.MillerWelds.com on the web.**

TRUE BLUE® WARRANTY

Working as hard as you do – every power source from Miller is backed by the most hassle-free warranty in the business.

Miller offers a Technical Manual which provides more detailed service and parts information for your unit. To obtain a Technical Manual, contact your local distributor. Your distributor can also supply you with Welding Process Manuals such as SMAW, GTAW, GMAW, and GMAW-P.

Miller® *The Power of Blue.*

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⚠ WARNING

This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

Declaration of Conformity for European Community (CE) Products

NOTE ☞	*This information is provided for units with CE certification (see rating label on unit).*

Manufacturer's Name: Miller Electric Mfg. Co.

Manufacturer's Address: 1635 W. Spencer Street
Appleton, WI 54914 USA

Declares that the product: **Super S-32P Ultra-Lite**

conforms to the following Directives and Standards:

Directives

Low Voltage Directive: 73/23/EEC

Electromagnetic Compatibility (EMC) Directive: 89/336/EEC

Machinery Directives: 89/392/EEC, 91/368/EEC, 93/C 133/04, 93/68/EEC

Standards

Arc Welding Equipment Part I: Welding Power Sources: IEC 974-1
(April 1995 – Draft Revision)

Arc Welding Equipment: Wirefeed Systems: IEC 974-4
(May 1995 – Draft Revision)

Degrees of Protection Provided By Enclosures (IP Code): IEC 529:1989

Insulation Coordination For Equipment With Low-Voltage Systems:
Part I: Principles, Requirements and Tests: IEC 664-1: 1992

Electromagnetic Compatibility, (EMC): EN 50199

European Contact: Mr. Danilo Fedolfi, Managing Director
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Via Privata Iseo
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Telephone: 39(02)98290-1
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SECTION 1 – SAFETY PRECAUTIONS - READ BEFORE USING

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1-1. Symbol Usage

Means Warning! Watch Out! There are possible hazards with this procedure! The possible hazards are shown in the adjoining symbols.

▲ **Marks a special safety message.**

☞ *Means "Note"; not safety related.*

This group of symbols means Warning! Watch Out! possible ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

1-2. Arc Welding Hazards

▲ **The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Safety Standards listed in Section 1-4. Read and follow all Safety Standards.**

▲ **Only qualified persons should install, operate, maintain, and repair this unit.**

▲ **During operation, keep everybody, especially children, away.**

ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

- Do not touch live electrical parts.
- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or if there is a danger of falling.
- Use AC output ONLY if required for the welding process.
- If AC output is required, use remote output control if present on unit.
- Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
- Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
- Always verify the supply ground – check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
- When making input connections, attach proper grounding conductor first – double-check connections.
- Frequently inspect input power cord for damage or bare wiring – replace cord immediately if damaged – bare wiring can kill.
- Turn off all equipment when not in use.
- Do not use worn, damaged, undersized, or poorly spliced cables.
- Do not drape cables over your body.
- If earth grounding of the workpiece is required, ground it directly with a separate cable.
- Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal.

SIGNIFICANT DC VOLTAGE exists after removal of input power on inverters.

- Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Maintenance Section before touching any parts.

FUMES AND GASES can be hazardous.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases.
- If ventilation is poor, use an approved air-supplied respirator.
- Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instructions for metals, consumables, coatings, cleaners, and degreasers.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watch-person nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

ARC RAYS can burn eyes and skin.

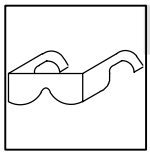
Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear a welding helmet fitted with a proper shade of filter to protect your face and eyes when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
- Wear protective clothing made from durable, flame-resistant material (leather and wool) and foot protection.

WELDING can cause fire or explosion.

Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding.

- Protect yourself and others from flying sparks and hot metal.
- Do not weld where flying sparks can strike flammable material.
- Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not weld on closed containers such as tanks, drums, or pipes, unless they are properly prepared according to AWS F4.1 (see Safety Standards).
- Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock and fire hazards.
- Do not use welder to thaw frozen pipes.
- Remove stick electrode from holder or cut off welding wire at contact tip when not in use.
- Wear oil-free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
- Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding.



FLYING METAL can injure eyes.

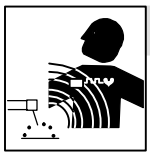
- Welding, chipping, wire brushing, and grinding cause sparks and flying metal. As welds cool, they can throw off slag.
- Wear approved safety glasses with side shields even under your welding helmet.

BUILDUP OF GAS can injure or kill.

- Shut off shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.

HOT PARTS can cause severe burns.

- Do not touch hot parts bare handed.
- Allow cooling period before working on gun or torch.



MAGNETIC FIELDS can affect pacemakers.

- Pacemaker wearers keep away.
- Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.

NOISE can damage hearing.

Noise from some processes or equipment can damage hearing.

- Wear approved ear protection if noise level is high.

CYLINDERS can explode if damaged.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding or other electrical circuits.
- Never drape a welding torch over a gas cylinder.
- Never allow a welding electrode to touch any cylinder.
- Never weld on a pressurized cylinder – explosion will result.
- Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.

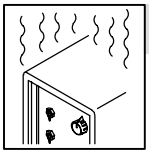
1-3. Additional Symbols For Installation, Operation, And Maintenance

FIRE OR EXPLOSION hazard.

- Do not install or place unit on, over, or near combustible surfaces.
- Do not install unit near flammables.
- Do not overload building wiring – be sure power supply system is properly sized, rated, and protected to handle this unit.

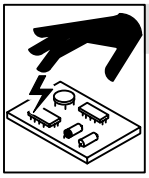
FALLING UNIT can cause injury.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.



OVERUSE can cause OVERHEATING

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter airflow to unit.



STATIC (ESD) can damage PC boards.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.

MOVING PARTS can cause injury.

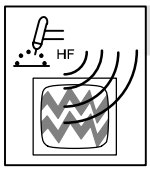
- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.

WELDING WIRE can cause injury.

- Do not press gun trigger until instructed to do so.
- Do not point gun toward any part of the body, other people, or any metal when threading welding wire.

MOVING PARTS can cause injury.

- Keep away from moving parts such as fans.
- Keep all doors, panels, covers, and guards closed and securely in place.



H.F. RADIATION can cause interference.

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment.
- Have only qualified persons familiar with electronic equipment perform this installation.
- The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- If notified by the FCC about interference, stop using the equipment at once.
- Have the installation regularly checked and maintained.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.

ARC WELDING can cause interference.

- Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots.
- Be sure all equipment in the welding area is electromagnetically compatible.
- To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor.
- Locate welding operation 100 meters from any sensitive electronic equipment.
- Be sure this welding machine is installed and grounded according to this manual.
- If interference still occurs, the user must take extra measures such as moving the welding machine, using shielded cables, using line filters, or shielding the work area.

1-4. Principal Safety Standards

Safety in Welding and Cutting, ANSI Standard Z49.1, from American Welding Society, 550 N.W. LeJeune Rd, Miami FL 33126

Safety and Health Standards, OSHA 29 CFR 1910, from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, American Welding Society Standard AWS F4.1, from American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126

National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3.

Safe Practices For Occupation And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 1430 Broadway, New York, NY 10018.

Cutting And Welding Processes, NFPA Standard 51B, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

1-5. EMF Information

Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

Welding current, as it flows through welding cables, will cause electromagnetic fields. There has been and still is some concern about such fields. However, after examining more than 500 studies spanning 17 years of research, a special blue ribbon committee of the National Research Council concluded that: “The body of evidence, in the committee’s judgment, has not demonstrated that exposure to power-frequency electric and magnetic fields is a human-health hazard.” However, studies are still going forth and evidence continues to be examined. Until the final conclusions of the research are reached, you may wish to minimize your exposure to electromagnetic fields when welding or cutting.

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.
4. Keep welding power source and cables as far away from operator as practical.
5. Connect work clamp to workpiece as close to the weld as possible.

About Pacemakers:

Pacemaker wearers consult your doctor first. If cleared by your doctor, then following the above procedures is recommended.

SECTION 1 – CONSIGNES DE SECURITE – LIRE AVANT UTILISATION

1-1. Signification des symboles

Signifie Mise en garde ! Soyez vigilant ! Cette procédure présente des risques de danger ! Ceux-ci sont identifiés par des symboles adjacents aux directives.

▲ **Identifie un message de sécurité particulier.**

☞ *Signifie NOTA ; n'est pas relatif à la sécurité.*

Ce groupe de symboles signifie Mise en garde ! Soyez vigilant ! Il y a des risques de danger reliés aux CHOCS ÉLECTRIQUES, aux PIÈCES EN MOUVEMENT et aux PIÈCES CHAUDES. Reportez-vous aux symboles et aux directives ci-dessous afin de connaître les mesures à prendre pour éviter tout danger.

1-2. Dangers relatifs au soudage à l'arc

▲ **Les symboles présentés ci-après sont utilisés tout au long du présent manuel pour attirer votre attention et identifier les risques de danger. Lorsque vous voyez un symbole, soyez vigilant et suivez les directives mentionnées afin d'éviter tout danger. Les consignes de sécurité présentées ci-après ne font que résumer l'information contenue dans les normes de sécurité énumérées à la section 1-4. Veuillez lire et respecter toutes ces normes de sécurité.**

▲ **L'installation, l'utilisation, l'entretien et les réparations ne doivent être confiés qu'à des personnes qualifiées.**

▲ **Au cours de l'utilisation, tenir toute personne à l'écart et plus particulièrement les enfants.**

UN CHOC ÉLECTRIQUE peut tuer.

Un simple contact avec des pièces électriques peut provoquer une électrocution ou des blessures graves. L'électrode et le circuit de soudage sont sous tension dès que l'appareil est sur ON. Le circuit d'entrée et les circuits internes de l'appareil sont également sous tension à ce moment-là. En soudage semi-automatique ou automatique, le fil, le dévidoir, le logement des galets d'entraînement et les pièces métalliques en contact avec le fil de soudage sont sous tension. Des matériels mal installés ou mal mis à la terre présentent un danger.

- Ne jamais toucher les pièces électriques sous tension.
- Porter des gants et des vêtements de protection secs ne comportant pas de trous.
- S'isoler de la pièce et de la terre au moyen de tapis ou d'autres moyens isolants suffisamment grands pour empêcher le contact physique éventuel avec la pièce ou la terre.
- Ne pas se servir de source électrique àcourant électrique dans les zones humides, dans les endroits confinés ou là où on risque de tomber.
- Se servir d'une source électrique àcourant électrique UNIQUEMENT si le procédé de soudage le demande.
- Si l'utilisation d'une source électrique àcourant électrique s'avère nécessaire, se servir de la fonction de télécommande si l'appareil en est équipé.
- Couper l'alimentation ou arrêter le moteur avant de procéder à l'installation, à la réparation ou à l'entretien de l'appareil. Déverrouiller l'alimentation selon la norme OSHA 29 CFR 1910.147 (voir normes de sécurité).
- Installer et mettre à la terre correctement cet appareil conformément à son manuel d'utilisation et aux codes nationaux, provinciaux et municipaux.
- Toujours vérifier la terre du cordon d'alimentation – Vérifier et s'assurer que le fil de terre du cordon d'alimentation est bien raccordé à la borne de terre du sectionneur ou que la fiche du cordon est raccordée à une prise correctement mise à la terre.
- En effectuant les raccordements d'entrée fixer d'abord le conducteur de mise à la terre approprié et contre-vérifier les connexions.
- Vérifier fréquemment le cordon d'alimentation pour voir s'il n'est pas endommagé ou dénudé – remplacer le cordon immédiatement s'il est endommagé – un câble dénudé peut provoquer une électrocution.
- Mettre l'appareil hors tension quand on ne l'utilise pas.
- Ne pas utiliser des câbles usés, endommagés, de grosseur insuffisante ou mal épissés.
- Ne pas enrouler les câbles autour du corps.
- Si la pièce soudée doit être mise à la terre, le faire directement avec un câble distinct.
- Ne pas toucher l'électrode quand on est en contact avec la pièce, la terre ou une électrode provenant d'une autre machine.
- N'utiliser qu'un matériel en bon état. Réparer ou remplacer sur-le-champ les pièces endommagées. Entretenir l'appareil conformément à ce manuel.
- Porter un harnais de sécurité quand on travaille en hauteur.
- Maintenir solidement en place tous les panneaux et capots.
- Fixer le câble de retour de façon à obtenir un bon contact métal-métal avec la pièce à souder ou la table de travail, le plus près possible de la soudure.
- Isoler la pince de masse quand pas mis à la pièce pour éviter le contact avec tout objet métallique.

Il y a DU COURANT CONTINU IMPORTANT dans les convertisseurs après la suppression de l'alimentation électrique.

- Arrêter les convertisseurs, débrancher le courant électrique, et décharger les condensateurs d'alimentation selon les instructions indiquées dans la partie entretien avant de toucher les pièces.

LES FUMÉES ET LES GAZ peuvent être dangereux.

Le soudage génère des fumées et des gaz. Leur inhalation peut être dangereux pour votre santé.

- Eloigner votre tête des fumées. Ne pas respirer les fumées.
- A l'intérieur, ventiler la zone et/ou utiliser un échappement au niveau de l'arc pour l'évacuation des fumées et des gaz de soudage.
- Si la ventilation est insuffisante, utiliser un respirateur à alimentation d'air homologué.
- Lire les spécifications de sécurité des matériaux (MSDSs) et les instructions du fabricant concernant les métaux, les consommables, les revêtements, les nettoyants et les dégraisseurs.
- Travailler dans un espace fermé seulement s'il est bien ventilé ou en portant un respirateur à alimentation d'air. Demander toujours à un surveillant dûment formé de se tenir à proximité. Des fumées et des gaz de soudage peuvent déplacer l'air et abaisser le niveau d'oxygène provoquant des blessures ou des accidents mortels. S'assurer que l'air de respiration ne présente aucun danger.
- Ne pas souder dans des endroits situés à proximité d'opérations de dégraissage, de nettoyage ou de pulvérisation. La chaleur et les rayons de l'arc peuvent réagir en présence de vapeurs et former des gaz hautement toxiques et irritants.
- Ne pas souder des métaux munis d'un revêtement, tels que l'acier galvanisé, plaqué en plomb ou au cadmium à moins que le revêtement n'ait été enlevé dans la zone de soudure, que l'endroit soit bien ventilé, et si nécessaire, en portant un respirateur à alimentation d'air. Les revêtements et tous les métaux renfermant ces éléments peuvent dégager des fumées toxiques en cas de soudage.

LES RAYONS DE L'ARC peuvent provoquer des brûlures dans les yeux et sur la peau.

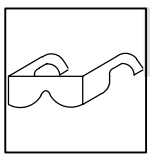
Le rayonnement de l'arc du procédé de soudage génère des rayons visibles et invisibles intenses (ultraviolets et infrarouges) susceptibles de provoquer des brûlures dans les yeux et sur la peau. Des étincelles sont projetées pendant le soudage.

- Porter un casque de soudage muni d'un écran de filtre approprié pour protéger votre visage et vos yeux pendant le soudage ou pour regarder (voir ANSI Z49.1 et Z87.1 énuméré dans les normes de sécurité).
- Porter des protections approuvés pour les oreilles si le niveau sondre est trop élevé.
- Utiliser des écrans ou des barrières pour protéger des tiers de l'éclair et de l'éblouissement; demander aux autres personnes de ne pas regarder l'arc.
- Porter des vêtements de protection constitué dans une matière durable, résistant au feu (cuir ou laine) et une protection des pieds.

LE SOUDAGE peut provoquer un incendie ou une explosion.

Le soudage effectué sur des conteneurs fermés tels que des réservoirs, tambours ou des conduites peut provoquer leur éclatement. Des étincelles peuvent être projetées de l'arc de soudure. La projection d'étincelles, des pièces chaudes et des équipements chauds peut provoquer des incendies et des brûlures. Le contact accidentel de l'électrode avec des objets métalliques peut provoquer des étincelles, une explosion, un surchauffement ou un incendie. Avant de commencer le soudage, vérifier et s'assurer que l'endroit ne présente pas de danger.

- Se protéger et d'autres personnes de la projection d'étincelles et de métal chaud.
- Ne pas souder dans un endroit là où des étincelles peuvent tomber sur des substances inflammables.
- Déplacer toutes les substances inflammables à une distance de 10,7 m de l'arc de soudage. En cas d'impossibilité les recouvrir soigneusement avec des protections homologués.
- Des étincelles et des matériaux chauds du soudage peuvent facilement passer dans d'autres zones en traversant de petites fissures et des ouvertures.
- Surveiller tout déclenchement d'incendie et tenir un extincteur à proximité.
- Le soudage effectué sur un plafond, plancher, paroi ou séparation peut déclencher un incendie de l'autre côté.
- Ne pas effectuer le soudage sur des conteneurs fermés tels que des réservoirs, tambours, ou conduites, à moins qu'ils n'aient été préparés correctement conformément à AWS F4.1 (voir les normes de sécurité).
- Brancher le câble sur la pièce le plus près possible de la zone de soudage pour éviter le transport du courant sur une longue distance par des chemins inconnus éventuels en provoquant des risques d'électrocution et d'incendie.
- Ne pas utiliser le poste de soudage pour dégeler des conduites gelées.
- En cas de non utilisation, enlever la baguette d'électrode du porte-électrode ou couper le fil à la pointe de contact.
- Porter des vêtements de protection dépourvus d'huile tels que des gants en cuir, une chemise en matériau lourd, des pantalons sans revers, des chaussures hautes et un couvre chef.
- Avant de souder, retirer toute substance combustible de vos poches telles qu'un allumeur au butane ou des allumettes.



DES PARTICULES VOLANTES peuvent blesser les yeux.

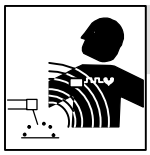
- Le soudage, l'écaillement, le passage de la pièce à la brosse en fil de fer, et le meulage génèrent des étincelles et des particules métalliques volantes. Pendant la période de refroidissement des soudures, elles risquent de projeter du laitier.
- Porter des lunettes de sécurité avec écrans latéraux ou un écran facial.

LES ACCUMULATIONS DE GAZ risquent de provoquer des blessures ou même la mort.

- Fermer l'alimentation du gaz protecteur en cas de non utilisation.
- Veiller toujours à bien aérer les espaces confinés ou se servir d'un respirateur d'adduction d'air homologué.

DES PIÈCES CHAUDES peuvent provoquer des brûlures graves.

- Ne pas toucher des parties chaudes à mains nues
- Prévoir une période de refroidissement avant d'utiliser le pistolet ou la torche.



LES CHAMPS MAGNÉTIQUES peuvent affecter les stimulateurs cardiaques.

- Porteurs de stimulateur cardiaque, restez à distance.
- Les porteurs d'un stimulateur cardiaque doivent d'abord consulter leur médecin avant de s'approcher des opérations de soudage à l'arc, de gougeage ou de soudage par points.

LE BRUIT peut affecter l'ouïe.

Le bruit des processus et des équipements peut affecter l'ouïe.

- Porter des protections approuvés pour les oreilles si le niveau sondre est trop élevé.

Si des BOUTEILLES sont endommagées, elles pourront exploser.

Des bouteilles de gaz protecteur contiennent du gaz sous haute pression. Si une bouteille est endommagée, elle peut exploser. Du fait que les bouteilles de gaz font normalement partie du procédé de soudage, les manipuler avec précaution.

- Protéger les bouteilles de gaz comprimé d'une chaleur excessive, des chocs mécaniques, du laitier, des flammes ouvertes, des étincelles et des arcs.
- Placer les bouteilles debout en les fixant dans un support stationnaire ou dans un porte-bouteilles pour les empêcher de tomber ou de se renverser.
- Tenir les bouteilles éloignées des circuits de soudage ou autres circuits électriques.
- Ne jamais placer une torche de soudage sur une bouteille à gaz.
- Une électrode de soudage ne doit jamais entrer en contact avec une bouteille.
- Ne jamais souder une bouteille pressurisée – risque d'explosion.
- Utiliser seulement des bouteilles de gaz protecteur, régulateurs, tuyaux et raccords convenables pour cette application spécifique; les maintenir ainsi que les éléments associés en bon état.
- Ne pas tenir la tête en face de la sortie en ouvrant la soupape de la bouteille.
- Maintenir le chapeau de protection sur la soupape, sauf en cas d'utilisation ou de branchement de la bouteille.
- Lire et suivre les instructions concernant les bouteilles de gaz comprimé, les équipements associés et les publications P-1 CGA énumérées dans les normes de sécurité.

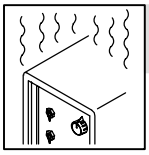
1-3. Dangers supplémentaires en relation avec l'installation, le fonctionnement et la maintenance

Risque D'INCENDIE OU D'EXPLOSION.

- Ne pas placer l'appareil sur, au-dessus ou à proximité de surfaces infllammables.
- Ne pas installer l'appareil à proximité de produits inflammables
- Ne pas surcharger l'installation électrique – s"assurer que l'alimentation est correctement dimensionné et protégé avant de mettre l'appareil en service.

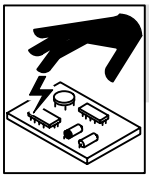
LA CHUTE DE L'APPAREIL peut blesser.

- Utiliser l'anneau de levage uniquement pour soulever l'appareil, NON PAS les chariot, les bouteilles de gaz ou tout autre accessoire.
- Utiliser un engin d'une capacité appropriée pour soulever l'appareil.
- En utilisant des fourches de levage pour déplacer l'unité, s'assurer que les fourches sont suffisamment longues pour dépasser du côté opposé de l'appareil.



L'EMPLOI EXCESSIF peut SURCHAUFFER L'ÉQUIPEMENT.

- Prévoir une période de refroidissement, respecter le cycle opératoire nominal.
- Réduire le courant ou le cycle opératoire avant de recommancer le soudage.
- Ne pas obstruer les passages d'air du poste.



LES CHARGES ÉLECTROSTATIQUES peuvent endommager les circuits imprimés.

- Établir la connexion avec la barrette de terre avant de manipuler des cartes ou des pièces.
- Utiliser des pochettes et des boîtes antistatiques pour stocker, déplacer ou expédier des cartes de circuits imprimes.

DES ORGANES MOBILES peuvent provoquer des blessures.

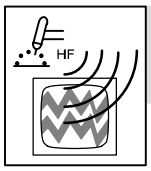
- Ne pas s'approcher des organes mobiles.
- Ne pas s'approcher des points de coincement tels que des rouleaux de commande.

LES FILS DE SOUDAGE peuvent provoquer des blessures.

- Ne pas appuyer sur la gachette avant d'en avoir reçu l'instruction.
- Ne pas diriger le pistolet vers soi, d'autres personnes ou toute pièce mécanique en engageant le fil de soudage.

DES ORGANES MOBILES peuvent provoquer des blessures.

- Rester à l'écart des organes mobiles comme le ventilateur.
- Maintenir fermés et fixement en place les portes, panneaux, recouvrements et dispositifs de protection.



LE RAYONNEMENT HAUTE FRÉQUENCE (H.F.) risque de provoquer des interférences.

- Le rayonnement haute frequence peut provoquer des interférences avec les équipements de radio–navigation et de communication, les services de sécurité et les ordinateurs.
- Demander seulement à des personnes qualifiées familiarisées avec des équipements électroniques de faire fonctionner l'installation.
- L'utilisateur est tenu de faire corriger rapidement par un électricien qualifié les interférences résultant de l'installation.
- Si le FCC signale des interférences, arrêter immédiatement l'appareil.
- Effectuer régulièrement le contrôle et l'entretien de l'installation.
- Maintenir soigneusement fermés les portes et les panneaux des sources de haute fréquence, maintenir les éclateurs à une distance correcte et utiliser une terre et et un blindage pour réduire les interférences éventuelles.

LE SOUDAGE À L'ARC risque de provoquer des interférences.

- L'énergie électromagnétique risque de provoquer des interférences pour l'équipement électronique sensible tel que les ordinateurs et l'équipement commandé par ordinateur tel que les robots.
- Veiller à ce que tout l'équipement de la zone de soudage soit compatible électromagnétiquement.
- Pour réduire la possibilité d'interférence, maintenir les câbles de soudage aussi courts que possible, les grouper, et les poser aussi bas que possible (ex. par terre).
- Veiller à souder à une distance de 100 mètres de tout équipement électronique sensible.
- Veiller à ce que ce poste de soudage soit posé et mis à la terre conformément à ce mode d'emploi.
- En cas d'interférences après avoir pris les mesures précédentes, il incombe à l'utilisateur de prendre des mesures supplémentaires telles que le déplacement du poste, l'utilisation de câbles blindés, l'utilisation de filtres de ligne ou la pose de protecteurs dans la zone de travail.

LES CHAMPS MAGNÉTIQUES peuvent affecter les stimulateurs cardiaques.

- Porteurs de stimulateur cardiaque, restez à distance.
- Les porteurs d'un stimulateur cardiaque doivent d'abord consulter leur médecin avant de s'approcher des opérations de soudage à l'arc, de gougeage ou de soudage par points.

1-4. Principales normes de sécurité

Safety in Welding and Cutting, norme ANSI Z49.1, de l'American Welding Society, 550 N.W. Lejeune Rd, Miami FL 33126

Safety and Health Sandards, OSHA 29 CFR 1910, du Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Recommended Safe Practice for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, norme AWS F4.1, de l'American Welding Society, 550 N.W. Lejeune Rd, Miami FL 33126

National Electrical Code, NFPA Standard 70, de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, de la Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202.

Règles de sécurité en soudage, coupage et procédés connexes, norme CSA W117.2, de l'Association canadienne de normalisation, vente de normes, 178 Rexdale Boulevard, Rexdale (Ontario) Canada M9W 1R3.

Safe Practices For Occupation And Educational Eye And Face Protection, norme ANSI Z87.1, de l'American National Standards Institute, 1430 Broadway, New York, NY 10018.

Cutting and Welding Processes, norme NFPA 51B, de la National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

1-5. Information sur les champs électromagnétiques

Données sur le soudage électrique et sur les effets, pour l'organisme, des champs magnétiques basse fréquence

Le courant de soudage, pendant son passage dans les câbles de soudage, causera des champs électromagnétiques. Il y a eu et il y a encore un certain souci à propos de tels champs. Cependant, après avoir examiné plus de 500 études qui ont été faites pendant une période de recherche de 17 ans, un comité spécial ruban bleu du National Research Council a conclu: "L'accumulation de preuves, suivant le jugement du comité, n'a pas démontré que l'exposition aux champs magnétiques et champs électriques à haute fréquence représente un risque à la santé humaine". Toutefois, des études sont toujours en cours et les preuves continuent à être examinées. En attendant que les conclusions finales de la recherche soient établies, il vous serait souhaitable de réduire votre exposition aux champs électromagnétiques pendant le soudage ou le coupage.

Afin de réduire les champs électromagnétiques dans l'environnement de travail, respecter les consignes suivantes :

1 Garder les câbles ensembles en les torsadant ou en les attachant avec du ruban adhésif.

2 Mettre tous les câbles du côté opposé de l'opérateur.

3 Ne pas courber pas et ne pas entourer pas les câbles autour de votre corps.

4 Garder le poste de soudage et les câbles le plus loin possible de vous.

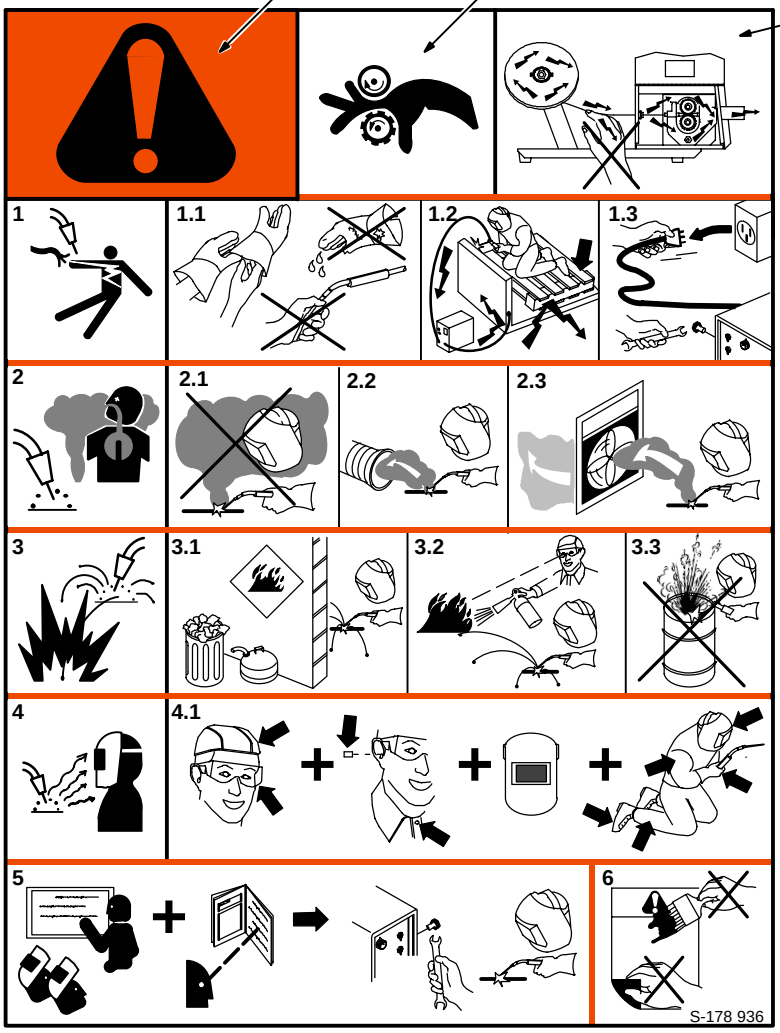
5 Relier la pince de masse le plus près possible de la zone de soudure.

Consignes relatives aux stimulateurs cardiaques :

Les personnes qui portent un stimulateur cardiaque doivent avant tout consulter leur docteur. Si vous êtes déclaré apte par votre docteur, il est alors recommandé de respecter les consignes ci–dessus.

SECTION 2 – DEFINITIONS

2-1. Warning Label Definitions



Warning! Watch Out! There are possible hazards as shown by the symbols.

Drive rolls can injure fingers

Welding wire and drive parts are at welding voltage during operation – keep hands and metal objects clear.

1 Electric shock can kill.

1.1 Wear dry insulating gloves. Do not touch electrode with bare hand. Do not wear wet or damaged gloves.

1.2 Protect yourself from electric shock by insulating yourself from work and ground.

1.3 Disconnect input plug or power before working on machine.

2 Breathing welding fumes can be hazardous to your health.

2.1 Keep your head out of the fumes.

2.2 Use forced ventilation or local exhaust to remove the fumes.

2.3 Use ventilating fan to remove fumes.

3 Welding sparks can cause explosion or fire.

3.1 Keep flammables away from welding. Don't weld near flammables.

3.2 Welding sparks can cause fires. Have a fire extinguisher nearby and have a watch person ready to use it.

3.3 Do not weld on drums or any closed containers.

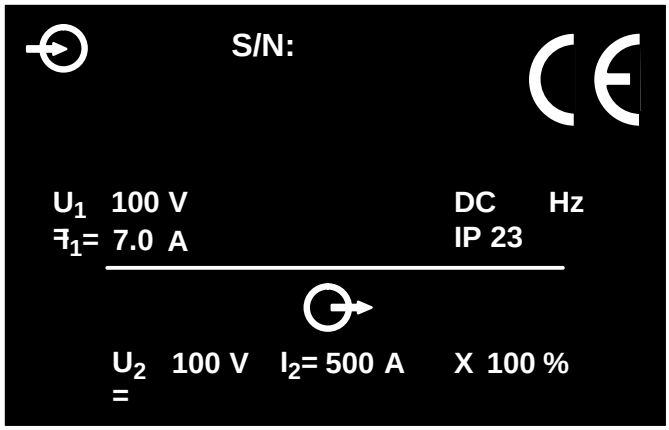
4 Arc rays can burn eyes and injure skin.

4.1 Wear hat and safety glasses. Use ear protection and button shirt collar. Use welding helmet with correct shade of filter. Wear complete body protection.

5 Become trained and read the instructions before working on the machine or welding.

6 Do not remove or paint over (cover) the label.

2-2. Manufacturer's Rating Label For CE Products



For label location see Section 4-1.

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2-3. Symbols And Definitions

NOTE *Some symbols are found only on CE products.*

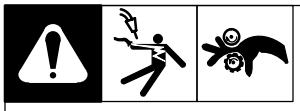
	Output		Input	A	Amperes	V	Volts
X	Duty Cycle		Wire Feed	%	Percent	IP	Degree Of Protection
V	Input		Cold Jog (Inch) Towards Workpiece		Purge By Gas		Increase
	Read Instructions	U_1	Primary Voltage	U_2	Conventional Load Voltage	Hz	Hertz
I_1	Primary Current	I_2	Rated Welding Current				

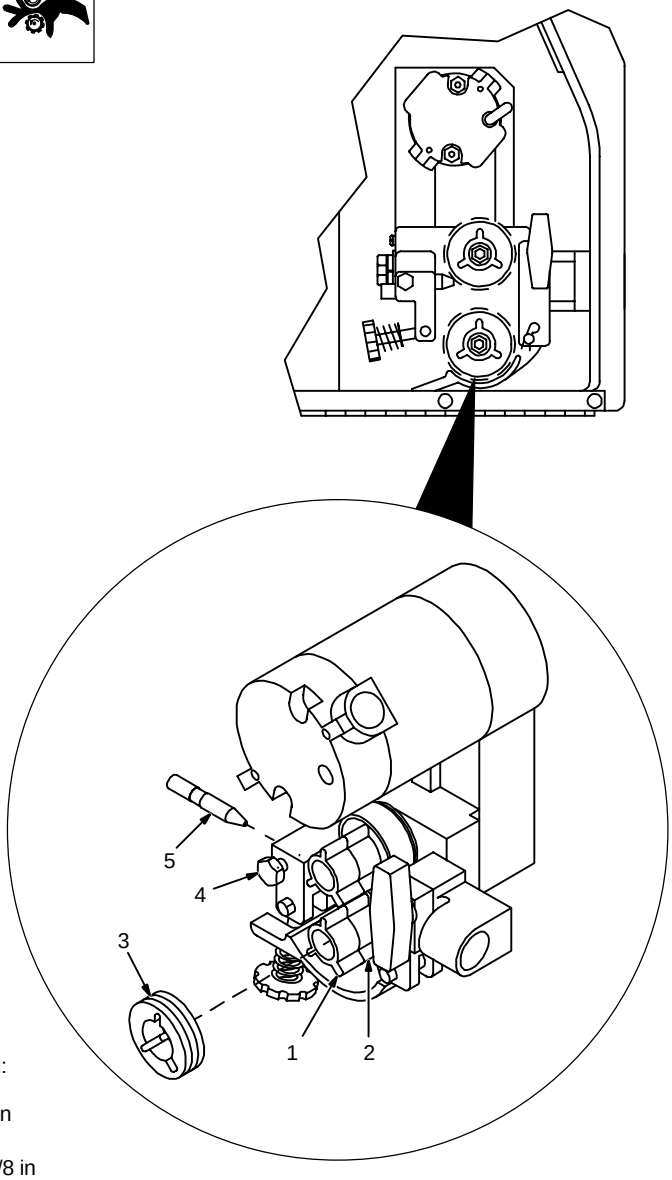
SECTION 3 – INSTALLATION

3-1. Specifications

Type of Input Power	Welding Power Source Type	Wire Feed Speed Range	Wire Diameter Range	Input Welding Circuit Rating	IP Rating	Max. Wire Spool Capacity	Overall Dimensions	Weight
Open-Circuit/ Arc Voltage, 15 To 100 Volts DC	Constant Voltage (CV) Or Constant Current (CC) DC	50 To 700 ipm (1.3 To 18 mpm) Depending On Arc Voltage	.023 To 5/64 in (0.6 To 2 mm)	500 Amperes At 100% Duty Cycle 330 Amperes At 60% Duty Cycle With Optional Secondary Contactor	23	30 lb (13.6 kg), 12 in (304 mm)	Length: 22-1/2 in (572 mm) Width: 8-3/4 in (222 mm) Height: 15-3/4 in (400 mm)	24 lb (10.9 kg)

3-2. Installing And Aligning Wire Guide And Drive Roll





When changing wire size or type, check drive roll and wire guide size (see Parts List).

Installing Wire Guide And Drive Rolls:

1 Drive Roll Nut

2 Drive Roll Carrier

Turn nut one click until lobes of nut line up with lobes of drive roll carrier.

3 Drive Roll

Slide drive roll onto drive roll carrier. Turn nut one click.

Repeat procedure for top drive roll.

4 Inlet Wire Guide Screw

5 Inlet Wire Guide

Loosen securing screw. Install inlet guide so inlet guide screw is centered in groove in guide, or so tip is as close to drive rolls as possible without touching. Tighten screw.

Aligning Wire Guide And Drive Rolls:

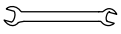
Only top drive roll alignment is adjustable. Turn adjustment screw in or out until groove in drive roll lines up with wire guide as shown.

Cleaning Drive Rolls:

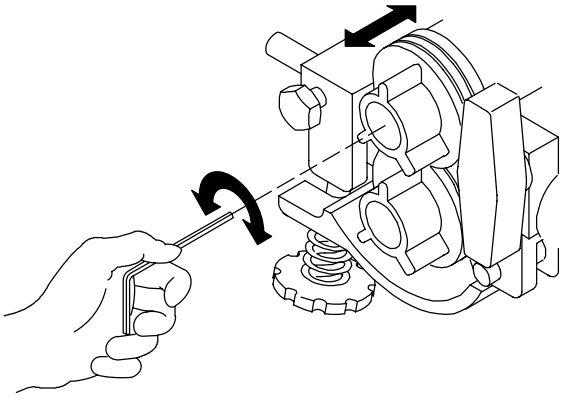
Remove drive rolls, and clean grooves using a wire brush.

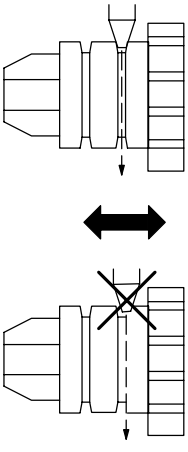
Tools Needed:

3/16 in


3/8 in

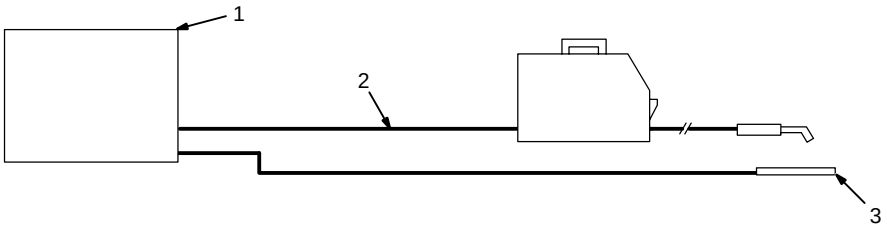
Alignment





ST-132 809-B / Ref. ST-132 808-F / Ref. ST-162 079-A / Ref. S-180 967

3-3. Typical Connections



1 CC Or CV Welding Power Source

If using a CC welding power source without a weld output contactor, use optional secondary contactor.

2 Weld Cable

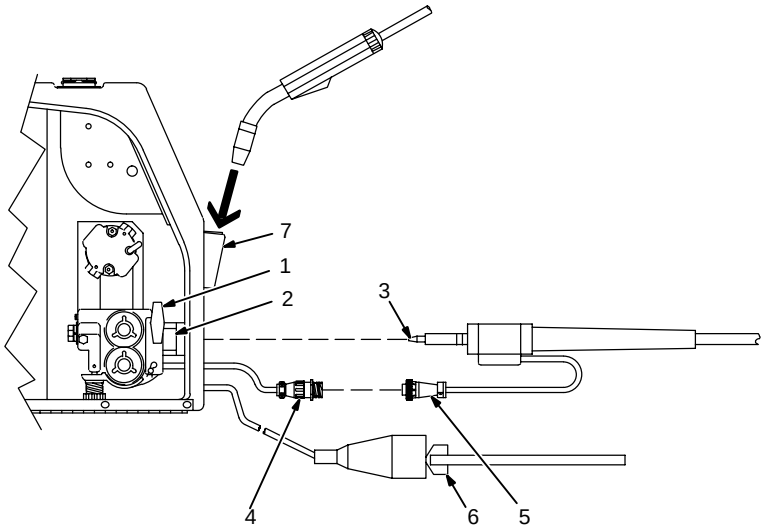
3 Work

For GMAW, use optional gas valve.

3-4. Gun Recommendation Table

Process	Gun
GMAW – Hard or Corded Wires	M25 Or M40
FCAW – Self-Shielding Wires	GA-40GL

3-5. Connecting Welding Gun And Voltage Sensing Lead



1 Gun Securing Knob

2 Gun Block

3 Gun Outlet Wire Guide

Loosen knob, insert gun end into block. Position outlet wire guide as close as possible to drive rolls without touching. Tighten knob.

4 Gun Trigger Plug

5 Gun Trigger Receptacle

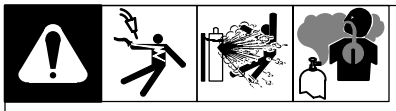
6 Voltage Sensing Clamp

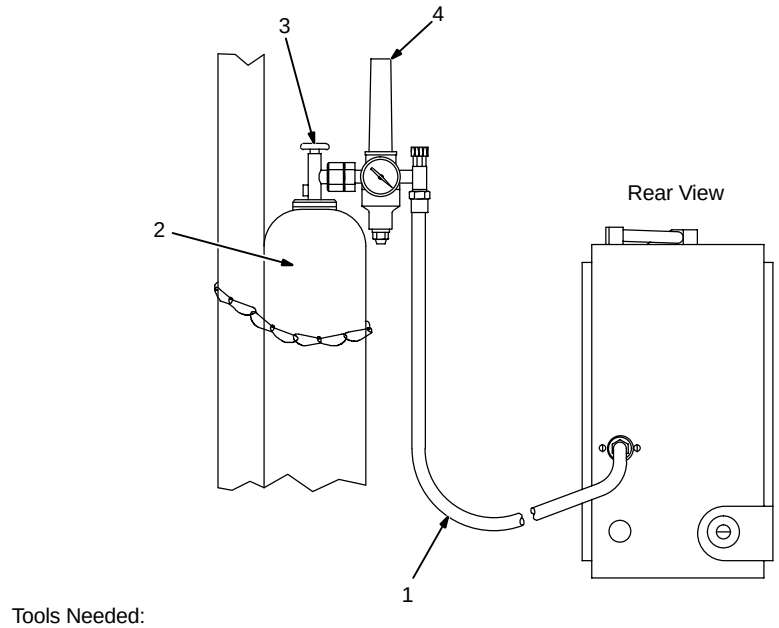
Connect to workpiece.

7 Gun Holder

ST-800 588-A / Ref. S-0621-C

3-6. Connecting Shielding Gas (Optional)





1 Gas Hose With 5/8-18 Right-hand Thread Fittings (Customer Supplied)

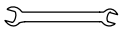
2 Shielding Gas Cylinder

3 Valve

4 Flowmeter

Close valve on cylinder when finished welding.

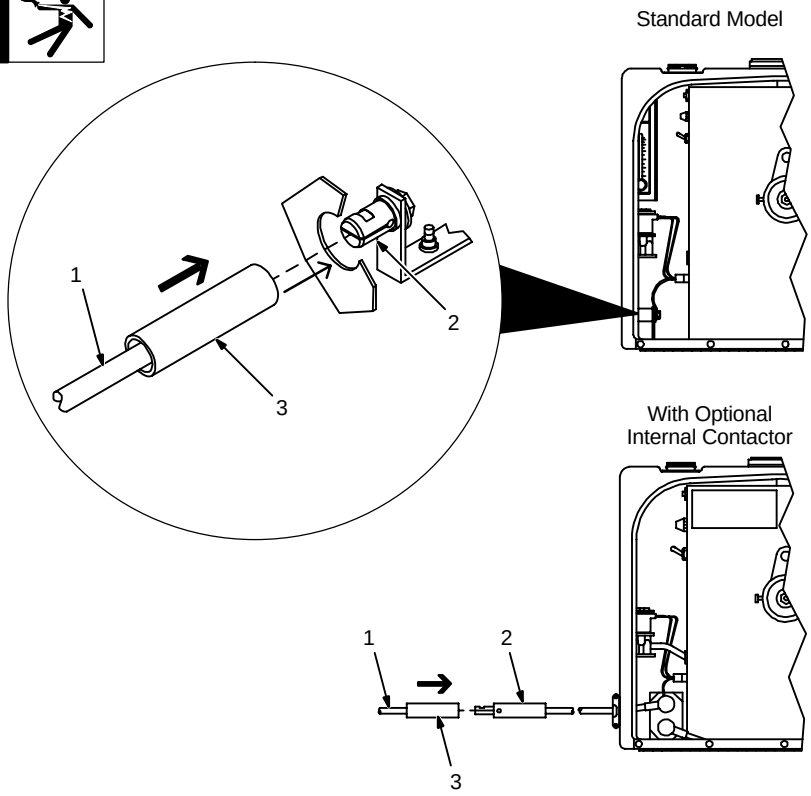
Tools Needed:



5/8 in

ST-801 155-A

3-7. Connecting Weld Cable



1 Weld Cable

Follow wire manufacturer's recommendations for weld cable polarity.

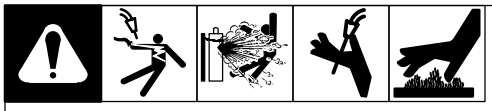
2 Male Connector

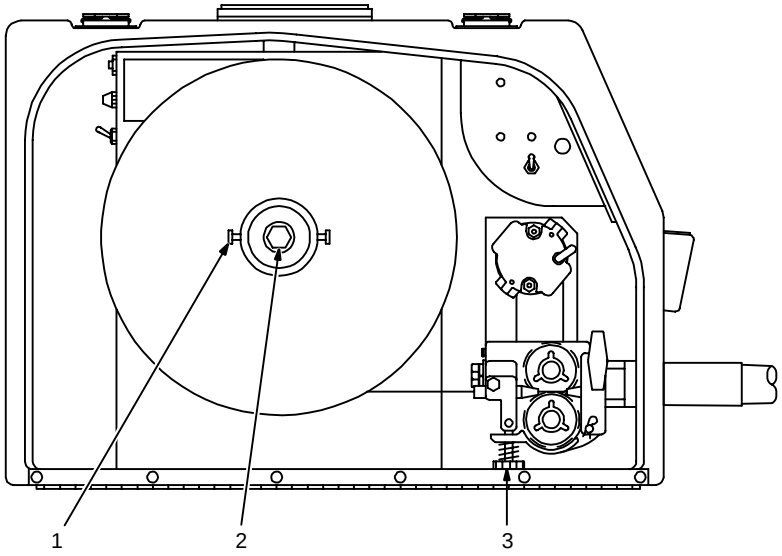
3 Female Connector

Close door, push female connector over male connector, and turn 1/4 turn clockwise.

Ref. ST-132 808-F / Ref. ST-157 658-D

3-8. Installing And Threading Welding Wire





1 Retaining Ring

2 Hub Tension Adjustment Nut

Installing Wire And Adjusting Hub Tension:

Remove retaining ring, and install spool so hub pin fits spool hole. Re-install retaining ring.

Adjust tension nut so only a slight force is needed to turn spool.

Threading Welding Wire:

3 Pressure Assembly Adjustment Knob

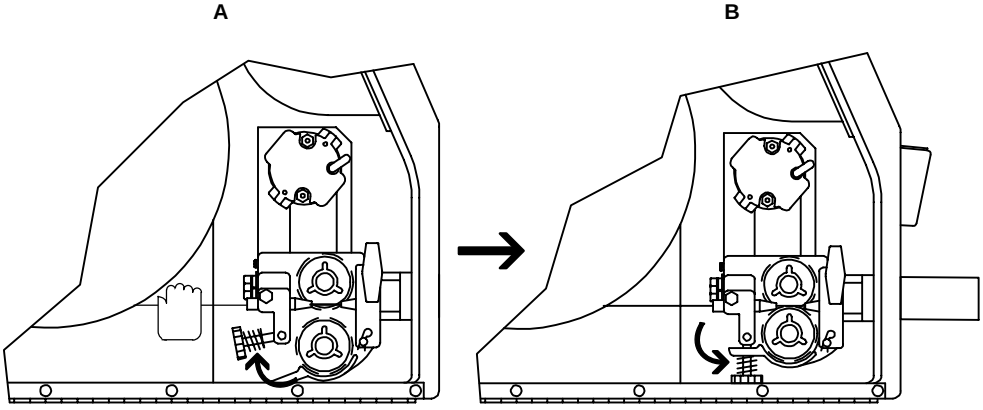
Lay gun cable out straight.

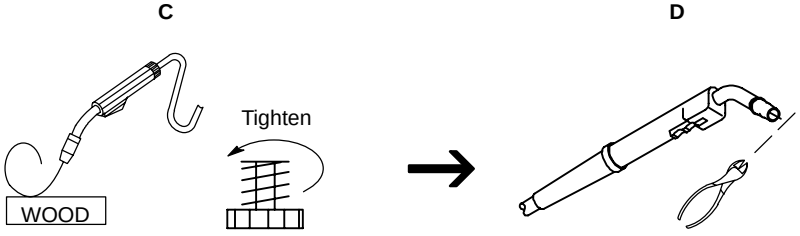
A Open pressure assembly, hold wire tightly, and cut off end. Push wire through guides into gun.

B Close and tighten pressure assembly. Press gun trigger until wire comes out gun.

C Feed wire against wooden surface, and tighten knob so wire does not slip.

D Cut off wire, and close door.





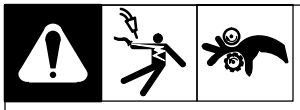
Tools Needed:

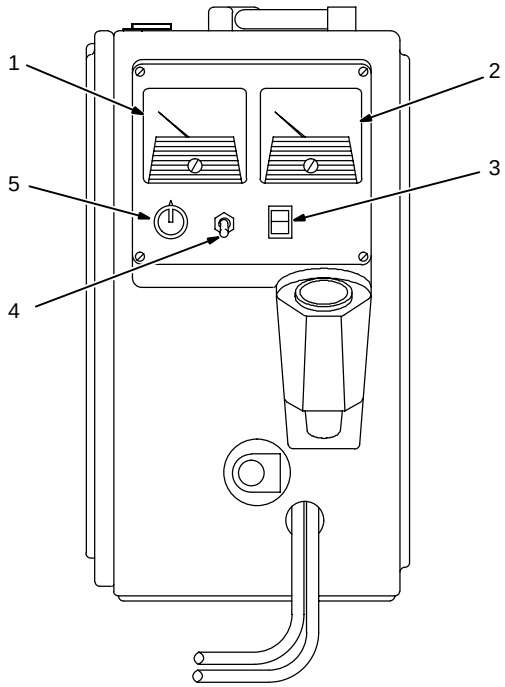
9/16 in

ST-800 586-B / Ref. ST-159 048-A / S-0627-A

SECTION 4 – OPERATION

4-1. Controls





1 Wire Speed Meter (Optional)

2 Voltage Meter (Optional)

Use meter to set and display rate of wire speed in inches per minute (ipm).

3 Power Control Switch

4 Wire Speed Range Switch

5 Wire Speed Control

Use switch to select high or low wire speed range. High range is 100 to 700 ipm. Low range is 50 to 350 ipm.

Use control to adjust wire speed within range selected by switch.

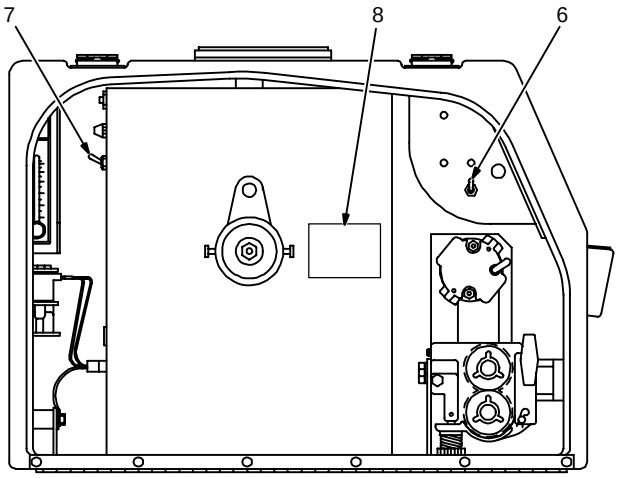
6 Purge Switch (Optional)

Press switch to momentarily energize gas solenoid and purge air from gun, and to adjust shielding gas regulator.

7 CC/CV Switch

Use switch to match wire feeder with welding power source output.

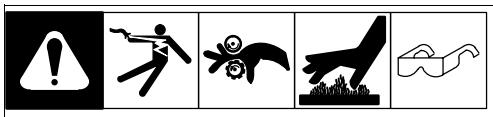
8 Rating Label Location

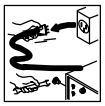


Ref. ST-139 026-B / Ref. ST-132 808-F

SECTION 5 – MAINTENANCE & TROUBLESHOOTING

5-1. Routine Maintenance

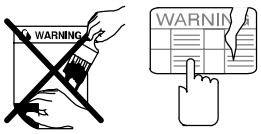




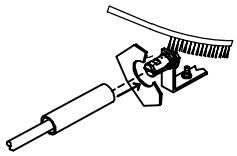
▲ **Disconnect power before maintaining.**

☞ *Maintain more often during severe conditions.*

3 Months

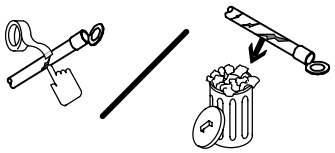


Replace Damaged Or Unreadable Labels



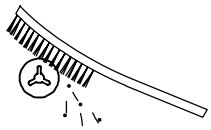
Clean And Tighten Weld Terminals

Replace Damaged Gas Hose

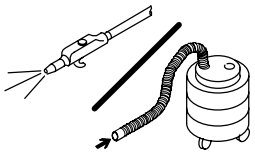


Repair Or Replace Cracked Cables And Cords

6 Months

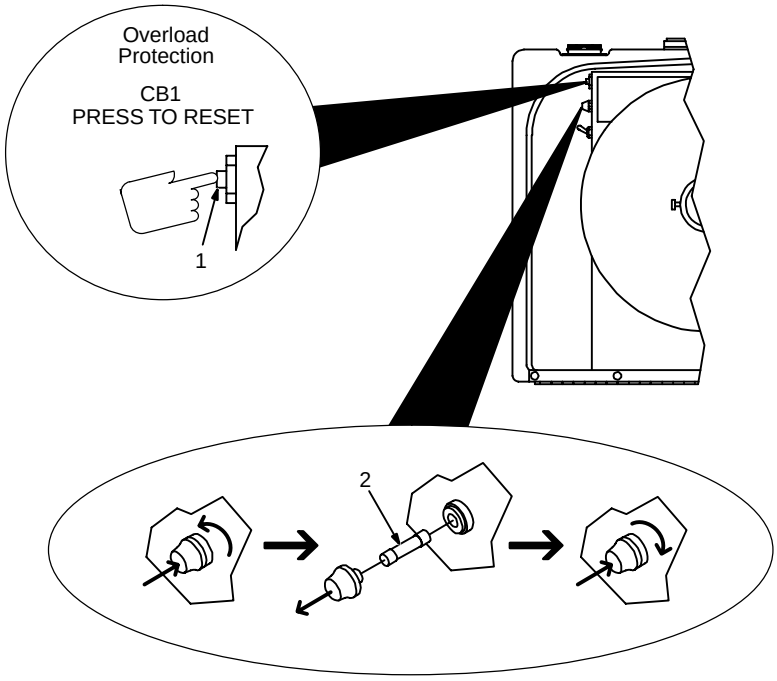


Clean Drive Rolls



Blow Out Or Vacuum Inside

5-2. Overload Protection



▲ **Turn Off wire feeder and welding power source. Stop engine on welding generator.**

1 Circuit Breaker CB1

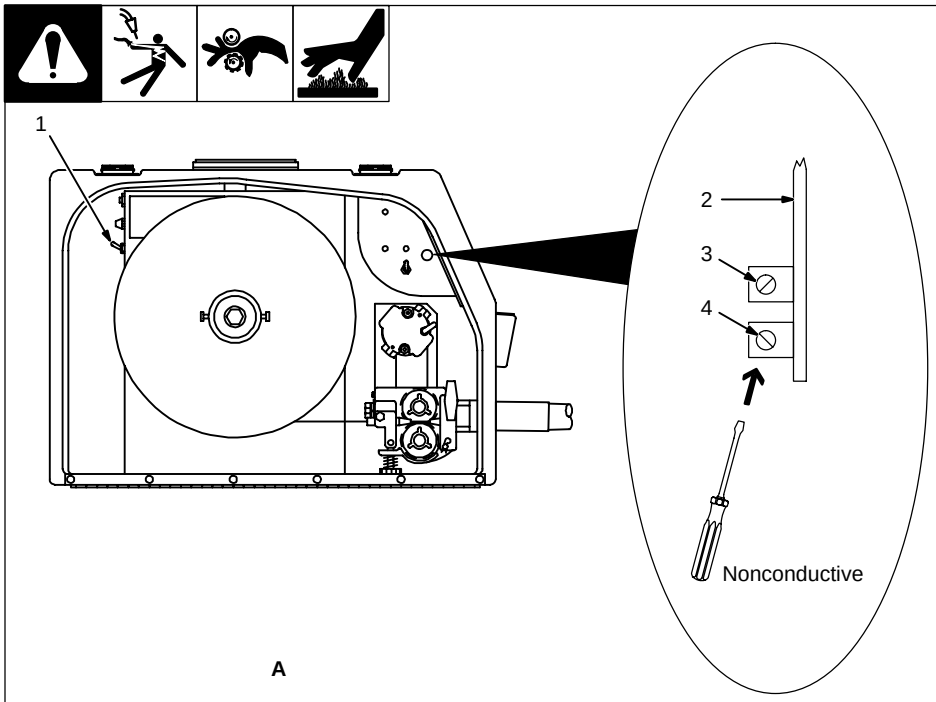
2 Fuse F1

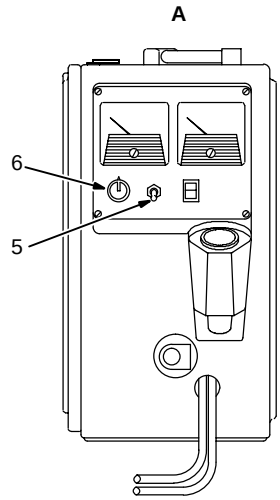
CB1 and F1 protect wire feeder from overload. Correct problem and reset CB1 or replace F1.

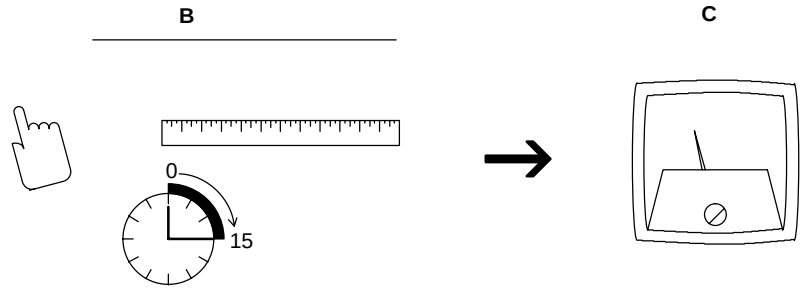
Close and latch door.

Ref. ST-800 586-B / Ref. S-801 128-A

5-3. Calibrating Optional IPM Meter







Meter is factory calibrated, but may need recalibration after motor brushes are fully seated. To recalibrate, proceed as follows:

1 CV/CC Switch

Set switch to CV.

2 Meter Board PC4

3 Resistor R53 Adjustment Screw (High Range)

4 Resistor R54 Adjustment Screw (Low Range)

Calibrate Low range wire speed first.

5 Wire Speed Range Switch

6 Wire Speed Control

A Set range switch to Low, and control to about 50%. Turn wire feeder and welding power source On.

B Press trigger and feed wire for 15 seconds. Measure wire length, and multiply x 4 to get actual ipm. For example: If 49 inches feeds in 15 sec, 49 x 4 = 196 actual ipm.

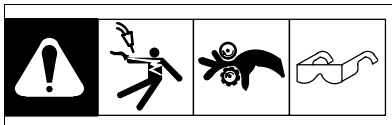
C Press trigger again: Meter reading should match actual ipm value, 196 in example. If not, press trigger and carefully adjust R54 until meter reads 196.

After Low range is calibrated, set range switch to High. Leave control at same setting (about 380 ipm). Repeat procedure to calibrate High range wire speed: About 95 inches should feed in 15 sec, 95 x 4 = 380 ipm. If needed, adjust R53 so meter reading matches actual ipm.

Turn off power. Close and latch door.

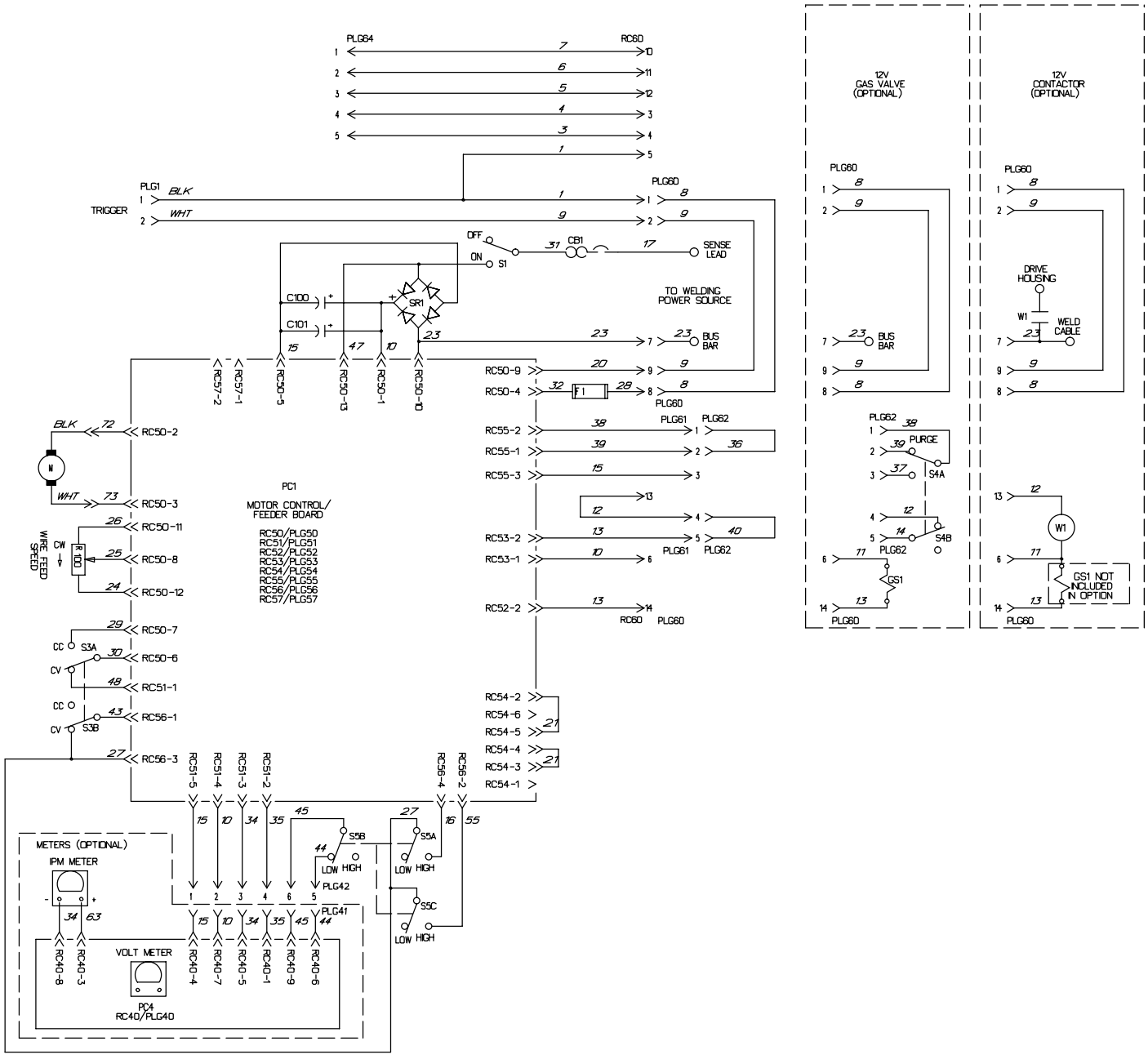
Ref. ST-800 586-B / Ref. ST-176 180

5-4. Troubleshooting



Trouble	Remedy
Wire does not feed; open-circuit voltage available.	Check circuit breaker CB1 and fuse F1. Reset CB1 or replace F1 if necessary (see Section 5-2).
	Check sensing lead connection.
	Check gun trigger plug connection.
	Check gun trigger. See gun Owner's Manual.
	Have Factory Authorized Service Agent check drive motor and control board PC1.
Wire feeds erratically.	Readjust hub tension (see Section 3-8).
	Readjust drive roll pressure (see Section 3-8).
	Use correct size drive roll (see Parts Listing)
	Clean or replace dirty or worn drive roll (see Section 3-2).
	Remove weld spatter around nozzle opening.
	Replace contact tip or liner. See gun Owner's Manual.
	Have Factory Authorized Service Agent check drive motor and control board PC1.
Wire feeds as soon as power is applied.	Check gun trigger. See gun Owner's Manual.
Wire stubbing on low end using a constant current power source.	Make sure CC/CV switch is in CC position (see Section 4-1).
	Increase output setting of power source.
Inaccurate optional IPM meter.	Calibrate meter (see Section 5-3).
Optional meters not working.	Have Factory Authorized Service Agent check meter board PC4 and control board PC1.
Gas does not flow; wire feeds.	Check optional gas valve and flowmeter.
	Have Factory Authorized Service Agent check control board PC1.
Gas does not stop flowing; wire feeds.	Adjust optional flowmeter.
	Have Factory Authorized Service Agent check control board PC1.

SECTION 6 – ELECTRICAL DIAGRAM



SC-176 218

Figure 6-1. Circuit Diagram For Wire Feeder

Notes

☞ *Hardware is common and not available unless listed.*

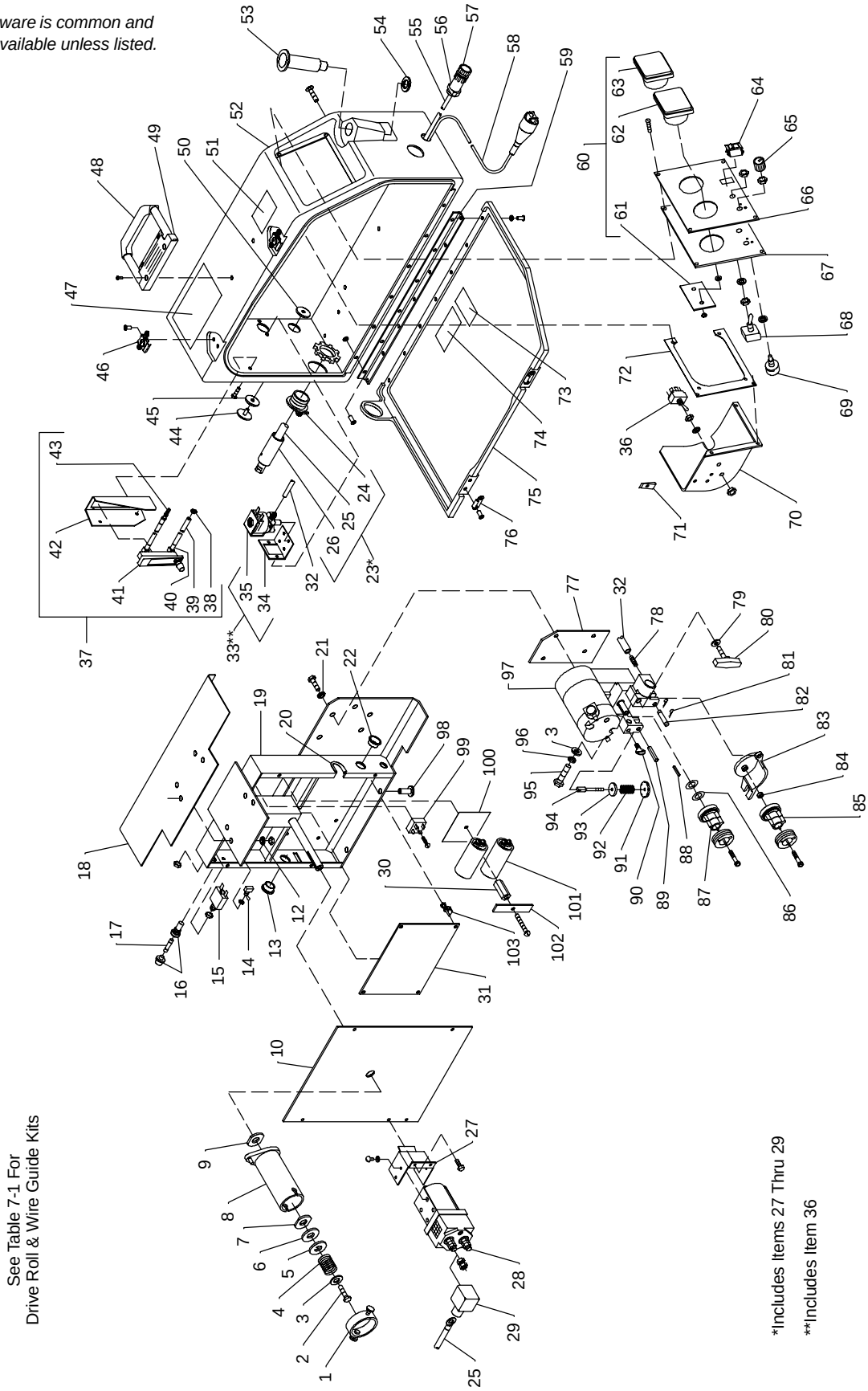


Figure 7-1. Complete Assembly

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 7-1. Complete Assembly	
1		058 427	RING, retaining spool	1
2		601 965	SCREW, cap stl hexhd .375-16 x 1.000	1
3		602 243	WASHER, flat stl std .438 ID	2
4		010 233	SPRING, cprsn .970 OD x .120 wire	1
5		057 971	WASHER, flat stl keyed 1.500dia	1
6		010 191	WASHER, fbr .656 ID x 1.500 OD	1
7		058 628	WASHER, brake stl	1
8		058 428	HUB, spool	1
9		058 424	WASHER, fibre (brake)	1
10		181 513	COVER, PC board	1
12		602 238	WASHER, flat .203 ID x .50 OD x .048 T stl pld ANSI #10	4
13		010 493	BUSHING, snap-in nyl .625 ID	1
14	S3	094 026	SWITCH, tgl DPDT 5A 125VAC	1
15	CB1	161 078	CIRCUIT BREAKER, man reset 1P 7A 250VAC	1
16		046 432	HOLDER, fuse mintr	1
17	F1	**012 653	FUSE, mintr gl .5A 250V	1
18		181 514	SUPPORT, case	1
19		181 519	CHASSIS, control box	1
		081 895	NUT, rbr 10-32 .75dia x .81 lg	5
		174 829	HOSE, nprn slit bk .156 ID x .343 OD x 4.500 lg	1
		168 590	BUSHING, insulating	1
		099 037	EDGE TRIM, style 62-1/16 (order by ft)	1ft
20		603 107	HOSE, nprn slit bk .156 ID x .343 OD (order by ft)	1ft
21		128 673	WASHER, shldr nyl .625 OD x .203 ID x .312dia shldr	4
22		030 170	BUSHING, snap-in nyl .750 ID x 1.000mtg hole	1
23		♦183 710	CONTACTOR KIT, Lenco/Tweco (consisting of)	1
24		010 467	CONNECTOR, clamp cable 1.250	1
25		600 322	CABLE, weld cop strd No. 2/0 (order by ft)	1ft
26		191 981	CONNECTOR, twlk insul male (Tweco)	1
		122 968	CONNECTOR, twlk insul fem (Tweco) (not supplied)	1
27		195 638	BRACKET, mtg contactor	1
28	W1	192 809	CONTACTOR, 12VDC SPST on-off	1
29		166 483	BOOT, insulator term post black 2/0 cable	1
	PLG60	131 056	CONNECTOR & SOCKETS	1
		121 481	TOOL, extraction pin Molex HT 60630-A	1
		126 313	BUS BAR, interconnecting (not used w/contactor kit option)	1
		191 961	CONNECTOR, twlk uninsul male screw mount (Tweco) (not used w/contactor kit option)	1
30		115 443	STAND–OFF, no. 6–32 X .750 lg .250 hex al m&f	1
31	PC1	206 057	CIRCUIT CARD, motor control	1
	PLG50	166 656	CONNECTOR & SOCKETS	1
	PLG51	166 657	CONNECTOR & SOCKETS	1
	PLG52,53	135 557	CONNECTOR & SOCKETS	2
	PLG54	135 558	CONNECTOR & SOCKETS	1
	PLG55	166 658	CONNECTOR & SOCKETS	1
	PLG56	153 501	CONNECTOR & SOCKETS	1
	PLG42	166 659	CONNECTOR & PINS	1
	PLG60	131 056	CONNECTOR & SOCKETS	1
	PLG61	131 060	CONNECTOR & PINS	1
	PLG62	131 055	CONNECTOR & SOCKETS	1
	PLG64	131 059	CONNECTOR & PINS	1
	RC60	131 058	CONNECTOR & PINS	1
		010 143	CLAMP, nyl .375clp dia	1
32		134 834	HOSE, SAE .187 ID x .410 OD (order by ft)	4ft
33		♦161 809	GAS VALVE, 12 VDC (consisting of)	1
34		126 310	BRACKET, mtg valve gas	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity

Figure 7-1. Complete Assembly (Continued)

35	GS1	128 074	VALVE, 12VDC 2 way custom port 1/8 orf	1
36	S4	118 681	SWITCH, tgl DPDT 15A 125VAC	1
	PLG60	131 056	CONNECTOR & SOCKETS	1
	PLG62	131 055	CONNECTOR & SOCKETS	1
		121 481	TOOL, extraction pin Molex HT 60630-A	1
37		♦161 811	FLOW METER, gas (consisting of)	1
38		089 120	CLAMP, hose .375-.450clp dia slfttng	2
39		134 834	HOSE, SAE .187 ID x .410 OD (order by ft)	2ft
40		112 090	FITTING, pipe brs elbow 1/8NPT x 3/16 hose	1
		056 108	FITTING, hose brs ferrule .450 ID x .718 lg	1
41		111 569	METER, flow 6-60	1
42		162 486	GUARD, flow meter	1
43		162 485	HOSE, gas output (consisting of)	1
		112 090	FITTING, pipe brs elbow 1/8NPT x 3/16 hose	1
		056 108	FITTING, hose brs ferrule .450 ID x .718 lg	2
		134 834	HOSE, SAE .187 ID x .410 OD (order by ft)	1ft
		079 196	FITTING, brs barbed fem 3/16tbg x 1/4NPT	1
		073 433	FITTING, brs barbed M 3/16tbg x 1/4NPT	1
44		134 230	BLANK, snap-in nyl .250mtg hole x 1.250 head	2
45		134 233	WASHER, fbr .281 ID x .781 OD x .125thk	1
		134 232	WASHER, fbr .281 ID x 1.031 OD x .125thk	1
46		089 572	CATCH, link lock	2
47		178 936	LABEL, warning general precautionary	1
48		126 416	HANDLE	1
49		126 415	CLAMP, saddle	1
50		134 231	WASHER, fbr .250 ID x 1.250 OD x .125thk	2
51		180 560	LABEL, warning electric shock can kill	1
52		+138 582	CASE, control feeder	1
53		090 099	INSULATOR, gun holder	1
54		044 800	WASHER, spring grip locking .750sft	1
55		049 455	CABLE, port No. 18 2/c (order by ft)	2ft
56		048 834	CONNECTOR, circ clamp str rlf sz 11 Amp 206062-4	1
57	PLG1	080 328	CONNECTOR w/SOCKETS, free hanging	1
58		126 693	CABLE, sensing 15ft (consisting of)	1
		601 222	CLAMP, universal 50A	1
		601 225	INSULATOR, vyl clamp blk	1
59		126 308	HINGE, cover	1
60		♦161 241	METER, V/WFS (consisting of)	1
61	PC4	162 223	CIRCUIT CARD, meter	1
	PLG40	163 467	CONNECTOR & SOCKETS	1
	PLG41	153 501	CONNECTOR & SOCKETS	1
62		091 961	METER, volt DC 0-10 scale	1
63		091 962	METER, IPM 0-10MV	1
64	S1	111 997	SWITCH, rocker SPST 10A 250VAC on-off	1
65		097 922	KNOB, pointer	1
66			NAMEPLATE, (order by model and serial number)	1
67		176 177	PANEL, front	1
68	S5	011 622	SWITCH, tgl 3PDT 15A 125VAC	1
69	R100	073 562	POTENTIOMETER	1
70		168 246	COVER, control/feeder	1
71		109 155	NUT, speed U type10-32	1
72		131 604	BRACKET, cover	1
73		071 602	LABEL, caution HF will damage	1
75		+138 581	COVER, control/feeder	1
75		+*175 156	COVER, control/feeder	1
76		089 573	PLATE, keeper link lock	2
77		089 556	INSULATION, motor	1
78		144 172	FITTING, brs barbed M 3/16tbg x .250-20	1

Item No.	Dia. Mkgs.	Part No.	Description	Quantity
			Figure 7-1. Complete Assembly (Continued)	
79		604 538	WASHER, flat stl SAE .312	1
80		124 778	KNOB, plstc T 1.000 lg x .312-18 x 2.000 bar	1
81		151 828	PIN, cotter hair .054 x .750	2
82		089 555	PIN, hinge	1
83		166 338	LEVER, mtg pressure gear	1
84		166 072	SPACER, gear	1
85		172 075	CARRIER, drive roll w/components 24 pitch	1
86		079 625	WASHER, spring stl .500 shakeproof	2
87		172 076	CARRIER, drive roll w/components keyed 24 pitch	1
88		092 865	KEY, stl .1215/.1230 x .750	1
89		010 224	PIN, spring CS .187 x 1.000	1
90		054 263	SCREW, thumb stl .250-20 x .500	1
91		085 243	KNOB, adj tension	1
92		089 477	SPRING, cprsn .770 OD x .100 wire x .715	1
93		085 244	WASHER, cupped stl .328 ID x .812 OD x .125 lip	1
94		089 562	FASTENER, pinned	1
95		601 964	SCREW, cap stl hexhd .375-16 x .750	1
96		602 213	WASHER, lock stl split .375	1
97	M	160 816	MOTOR, 24VDC 5.2A 118RPM (consisting of)	1
		**095 564	BRUSH, motor carbon	2
		095 565	CAP, brush motor	2
98		081 895	NUT, well 10-32	5
99	SR1	035 704	RECTIFIER, integ 40A 800V	1
100		126 764	INSULATOR, capacitor	1
101	C100,101	111 441	CAPACITOR, elctlt 1200uf 250VDC	2
102		126 312	STRIP, mtg capacitor	1
103		134 201	STAND-OFF SUPPORT, PC card .312/.375W/post&lock	4

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

♦OPTIONAL

*Part of 183 710 Contactor Kit Option.

**Recommended Spare Parts.

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

Table 7-1. Drive Roll & Wire Guide Kits (2 Drive Roll)

NOTE ☞

Base selection of drive rolls upon the following recommended usages:

1. *V-Grooved rolls for hard wire.*
2. *U-Grooved rolls for soft and soft shelled cored wires.*
3. *U-Cogged rolls for extremely soft shelled wires (usually hard surfacing types).*
4. *V-Knurled rolls for hard shelled cored wires.*
5. *Drive roll types may be mixed to suit particular requirements (example: V-Knurled roll in combination with U-Grooved).*

Wire Diameter			Kit No.	Drive Roll		Inlet Wire Guide
Fraction	Decimal	Metric		Part No.	Type	
.023/.025 in	.023/.025 in	0.6 mm	087 131	087 130	V-Grooved	056 192
.030 in	.030 in	0.8 mm	079 594	053 695	V-Grooved	056 192
.035 in	.035 in	0.9 mm	079 595	053 700	V-Grooved	056 192
.040 in	.040 in	1.0 mm	161 189	053 696	V-Grooved	056 192
.045 in	.045 in	1.2 mm	079 596	053 697	V-Grooved	056 193
.052 in	.052 in	1.3 mm	079 597	053 698	V-Grooved	056 193
1/16 in	.062 in	1.6 mm	079 598	053 699	V-Grooved	056 195
.035 in	.035 in	0.9 mm	044 749	072 000	U-Grooved	056 192
.045 in	.045 in	1.2 mm	079 599	053 701	U-Grooved	056 193
.052 in	.052 in	1.3 mm	079 600	053 702	U-Grooved	056 193
1/16 in	.062 in	1.6 mm	079 601	053 706	U-Grooved	056 195
5/64 in	.079 in	2.0 mm	079 602	053 704	U-Grooved	056 195
.035 in	.035 in	0.9 mm	079 606	132 958	V-Knurled	056 192
.045 in	.045 in	1.2 mm	079 607	132 957	V-Knurled	056 193
.052 in	.052 in	1.3 mm	079 608	132 956	V-Knurled	056 193
1/16 in	.062 in	1.6 mm	079 609	132 955	V-Knurled	056 195
.068-.072 in	.068-.072	1.8 mm	089 984	132 959	V-Knurled	056 195
5/64 in	.079 in	2.0 mm	079 610	132 960	V-Knurled	056 195
.045 in	.045 in	1.2 mm	083 318	083 489	U-Cogged	056 193
.052 in	.052 in	1.3 mm	083 317	083 490	U-Cogged	056 193
1/16 in	.062 in	1.6 mm	079 614	053 708	U-Cogged	056 195
5/64 in	.079 in	2.0 mm	079 615	053 710	U-Cogged	056 195

S-0859

Dia. Mkgs.	Part No.	Description	Quantity
		Optional Equipment	
	130 676	CONTACTOR KIT, (see Figure 7-1)	1
	130 686	REMOTE CONTACTOR/VOLTAGE CONTROL, (consisting of)	1
PC5	132 253	CIRCUIT CARD, remote contactor relay	1
	132 545	BRACKET, mtg relay	1
	070 026	STAND-OFF, 6-32 x .437 lg	3
PLG60	131 056	CONNECTOR & SOCKETS	1
PLG63	115 093	CONNECTOR & SOCKETS	1
PLG69	131 059	CONNECTOR & PINS	1
	132 587	CABLE, contactor/voltage control (consisting of)	1
PLG70	115 093	CONNECTOR & SOCKETS	1
	115 104	CONNECTOR, clamp cable .500	1
	110 015	CABLE, port No. 18 7/c (order by ft)	2ft
PLG71	141 162	CONNECTOR & PINS, (consisting of)	1
	079 739	CONNECTOR, circ clamp str rlf sz 17-20 Amp 206322-2	1
	121 481	TOOL, extraction pin Molex HT 60630-A	1
	121 482	TOOL, extraction pin Amphenol No. 356-263	1
PLG73	115 092	CONNECTOR & SOCKETS	1
PLG74	131 204	CONNECTOR & SOCKETS	1
R101	035 897	POTENTIOMETER, CP std slot 1/T 2W 1K ohm	1
	097 922	KNOB, pointer	1
RC74	131 203	CONNECTOR & PINS	1
	161 241	METERS, V/WFS (see Figure 7-1)	1
	161 809	GAS VALVE, 12 VDC (see Figure 7-1)	1
	161 811	FLOW METER, gas (see Figure 7-1)	1

To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.

Notes

Notes

Notes

Warranty Questions?

Call
1-800-4-A-MILLER
for your local
Miller distributor.

Your distributor also gives you ...

Service
You always get the fast, reliable response you need. Most replacement parts can be in your hands in 24 hours.

Support
Need fast answers to the tough welding questions? Contact your distributor. The expertise of the distributor and Miller is there to help you, every step of the way.

Miller
The Power of Blue.

TRUE BLUE® WARRANTY

Effective January 1, 2000
(Equipment with a serial number preface of "LA" or newer)

This limited warranty supersedes all previous Miller warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY – Subject to the terms and conditions below, Miller Electric Mfg. Co., Appleton, Wisconsin, warrants to its original retail purchaser that new Miller equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by Miller. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, Miller will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. Miller must be notified in writing within thirty (30) days of such defect or failure, at which time Miller will provide instructions on the warranty claim procedures to be followed.

Miller shall honor warranty claims on warranted equipment listed below in the event of such a failure within the warranty time periods. All warranty time periods start on the date that the equipment was delivered to the original retail purchaser, or one year after the equipment is sent to a North American distributor or eighteen months after the equipment is sent to an International distributor.

1. 5 Years Parts – 3 Years Labor
   * Original main power rectifiers
   * Inverters (input and output rectifiers only)
2. 3 Years — Parts and Labor
   * Transformer/Rectifier Power Sources
   * Plasma Arc Cutting Power Sources
   * Semi-Automatic and Automatic Wire Feeders
   * Inverter Power Supplies
   * Intellitig
   * Engine Driven Welding Generators **(NOTE: Engines are warranted separately by the engine manufacturer.)**
3. 1 Year — Parts and Labor
   * DS-2 Wire Feeder
   * Motor Driven Guns (w/exception of Spoolmate 185 & Spoolmate 250)
   * Process Controllers
   * Positioners and Controllers
   * Automatic Motion Devices
   * RFCS Foot Controls
   * Induction Heating Power Sources
   * Water Coolant Systems
   * HF Units
   * Grids
   * Maxstar 140
   * Spot Welders
   * Load Banks
   * Miller Cyclomatic Equipment
   * Running Gear/Trailers
   * Plasma Cutting Torches (except APT & SAF Models)
   * Field Options
     (NOTE: Field options are covered under True Blue® for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)
4. 6 Months — Batteries
5. 90 Days — Parts
   * MIG Guns/TIG Torches
   * Induction Heating Coils and Blankets
   * APT, ZIPCUT & PLAZCUT Model Plasma Cutting Torches
   * Remote Controls
   * Accessory Kits
   * Replacement Parts (No labor)
   * Spoolmate 185 & Spoolmate 250
   * Canvas Covers

Miller's True Blue® Limited Warranty shall not apply to:

1. **Consumable components; such as contact tips, cutting nozzles, contactors, brushes, slip rings, relays or parts that fail due to normal wear.**
2. Items furnished by Miller, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
3. Equipment that has been modified by any party other than Miller, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

MILLER PRODUCTS ARE INTENDED FOR PURCHASE AND USE BY COMMERCIAL/INDUSTRIAL USERS AND PERSONS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

In the event of a warranty claim covered by this warranty, the exclusive remedies shall be, at Miller's option: (1) repair; or (2) replacement; or, where authorized in writing by Miller in appropriate cases, (3) the reasonable cost of repair or replacement at an authorized Miller service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon actual use) upon return of the goods at customer's risk and expense. Miller's option of repair or replacement will be F.O.B., Factory at Appleton, Wisconsin, or F.O.B. at a Miller authorized service facility as determined by Miller. Therefore no compensation or reimbursement for transportation costs of any kind will be allowed.

TO THE EXTENT PERMITTED BY LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY OR REPRESENTATION AS TO PERFORMANCE, AND ANY REMEDY FOR BREACH OF CONTRACT TORT OR ANY OTHER LEGAL THEORY WHICH, BUT FOR THIS PROVISION, MIGHT ARISE BY IMPLICATION, OPERATION OF LAW, CUSTOM OF TRADE OR COURSE OF DEALING, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WITH RESPECT TO ANY AND ALL EQUIPMENT FURNISHED BY MILLER IS EXCLUDED AND DISCLAIMED BY MILLER.

Some states in the U.S.A. do not allow limitations of how long an implied warranty lasts, or the exclusion of incidental, indirect, special or consequential damages, so the above limitation or exclusion may not apply to you. This warranty provides specific legal rights, and other rights may be available, but may vary from state to state.

In Canada, legislation in some provinces provides for certain additional warranties or remedies other than as stated herein, and to the extent that they may not be waived, the limitations and exclusions set out above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary from province to province.

Owner's Record

Please complete and retain with your personal records.

Model Name Serial/Style Number

Purchase Date (Date which equipment was delivered to original customer.)

Distributor

Address

City

State Zip

For Service

Call 1-800-4-A-Miller or see our website at www.MillerWelds.com to locate a DISTRIBUTOR or SERVICE AGENCY near you.

Always provide Model Name and Serial/Style Number.

Contact your Distributor for:	Welding Supplies and Consumables
	Options and Accessories
	Personal Safety Equipment
	Service and Repair
	Replacement Parts
	Training (Schools, Videos, Books)
	Technical Manuals (Servicing Information and Parts)
	Circuit Diagrams
	Welding Process Handbooks
Contact the Delivering Carrier for:	File a claim for loss or damage during shipment.
For assistance in filing or settling claims, contact your distributor and/or equipment manufacturer's Transportation Department.	

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